

3.10 TRANSPORTATION

This section addresses the environmental setting for transportation, including the following modes of surface and air transportation:

- Highway traffic;
- Railroads;
- Public transportation;
- Pedestrian/bicycle circulation;
- Parking management; and
- Air transportation.

Marine shipping and navigation are addressed in Section 3.16, Waterborne Activity.

The primary ROI for transportation is the area within the Biloxi-Gulfport peninsula bounded by Back Bay on the north, the Biloxi-Ocean Springs Bridge on the east, the coast on the south, and Debuys Road on the west (see Figure 3.10-1). For the purpose of addressing indirect impacts, the ROI is expanded to include the three-county region of Harrison, Jackson, and Hancock Counties (see Figure 3.10-2).

3.10.1 Highway Traffic

In the context of this analysis, highway traffic refers to vehicular travel on state and federal highways and on major streets functionally classified as primary arterial, minor arterial, and collector street by the Transportation Plan Element of *Vision 2020 – The Biloxi Comprehensive Plan* and by the Gulf Coast Metropolitan Planning Organization.

3.10.1.1 Highway System Inventory

Major thoroughfares within the ROI are classified functionally by the Gulf Coast Metropolitan Planning Organization and the City of Biloxi Community and Economic Development Department. Major roadways are classified as interstate highways, principal arterials, minor arterials, and collector streets. City of Biloxi roadways are summarized in Appendix J. Appendix J also summarizes interstate and principal arterial roadways designated by the Gulf Regional Planning Commission in the remainder of the three-county region (GRPC, 1998a).

The principal north-south thoroughfare in the primary ROI is I-110. The primary east-west routes are I-10 (to the north of the city of Biloxi), US 90, and Pass Road. Individual descriptions of these and minor arterial roadways are presented in Appendix J.

3.10.1.2 Levels of Service in the ROI

To describe the level of congestion on a roadway segment or at an intersection, transportation planners and engineers use the term “Level of Service” (LOS). Levels of Service range from LOS A – a free-flow traffic condition – to LOS F, a complete breakdown of traffic. At a traffic

1 signal, LOS A exists when the average delay per vehicle is less than 5 seconds; LOS F means
2 average delays are greater than 60 seconds.

3
4 US 90 signalized intersections have been analyzed using procedures from the *Highway Capacity*
5 *Manual* (Transportation Research Board Report 309). Peak hour capacity analyses were
6 conducted at signalized intersections from Beauvoir Road to Porter Avenue (Baker, 1998a). The
7 analysis shows that through 1998, capacity was adequate at six of the eight intersections.
8 However, the US 90 intersections at Veterans Avenue and Porter were heavily congested during
9 the afternoon peak hour. The results of the LOS analysis are summarized in Table 3.10-1.

10
11 **Table 3.10-1**
12 **Level of Service Analysis for Selected Signalized Intersections: 1998**
13

Location	Intersection Type	AM Peak	PM Peak
US 90 at Beauvoir	Signalized	C	C
US 90 at Treasure Bay	Signalized	B	D
US 90 at Camellia St.	Signalized	B	B
US 90 at Veterans	Signalized	C	F
US 90 at Rodenberg	Signalized	B	C
US 90 at White	Signalized	B	C
US 90 at Porter	Signalized	B	F

14 Source: Baker, 1998a. Destination Broadwater Traffic Impact Study, Appendix F.

15
16 **3.10.1.3** *Traffic Trends and Travel Patterns in the ROI*
17

18 Trends in traffic volume are indicated by annual average daily traffic (AADT) recorded at fixed
19 locations on state highways monitored by the Mississippi Department of Transportation (MDOT)
20 and recorded at selected locations in the ROI by the Gulf Regional Planning Commission. Table
21 3.10-2 presents the five-year trend in traffic volumes at two continuous counting station locations
22 in the ROI (MDOT, 1996; GRPC, 1999).

23
24 **Table 3.10-2**
25 **Highway Traffic Volume Trends: Annual Average Daily Traffic (AADT)**
26

Location	1990	1991	1992	1993	1994	1995	Annual Average % Change 1990-95
US 90 (Gulfport)	26,060	29,278	32,256	36,928	37,085	35,289	7.1%
I-10 (Gulfport)	35,181	34,730	34,870	38,280	42,214	43,112	4.5%

27 Source: MDOT, 1996. Continuous Traffic Recorder Sites.

28
29 Trends at these two locations show significant traffic increases over the 1990-95 period.
30

Traffic volumes also vary by month of the year and day of the week. These variations are also measured using traffic recorders that provide continuous hourly and directional traffic counts. The closest continuous count station in the ROI is located on US 90 in Gulfport, 100 feet west of Teagarden Road. Table 3.10-3 indicates the monthly traffic variations in the ROI in 1996.

Table 3.10-3
1996 Monthly Variation of Traffic: US 90 in Gulfport

Month	ADT	% Average	Month	ADT	% Average
January	32,421	90.5	July	38,900	108.6
February	34,613	96.6	August	36,895	103.0
March	35,757	99.8	September	35,554	99.3
April	36,412	101.7	October	35,492	99.1
May	36,241	101.2	November	33,904	94.7
June	39,071	109.1	December	33,654	94.0
			Annual Avg.	35,742	100.0

Source: MDOT, 1996. Continuous Traffic Recorder Sites.

US 90 is a representative indicator of variation in traffic volumes in the area because it is the highest volume arterial roadway and feeds other routes. Table 3.10-3 shows that for US 90, June and July are the months that have the highest total traffic volumes of the year.

Tables 3.10-4 and 3.10-5 indicate the daily and hourly traffic variations in the ROI in 1996 and 1999. Table 3.10-4 shows that the peak day of the week is Friday, with an average daily traffic volume of 40,483 vehicles per day. The peak day of the week accounts for 16.15 percent of all trips during the week. Friday and Saturday are consistently the highest count days.

Table 3.10-4
US 90 Daily Traffic by Day of Week: 1996

	Mon.	Tues.	Weds.	Thurs.	Fri.	Sat.	Sun.	AVERAGE
ADT	34,761	35,742	35,824	36,643	40,483	37,338	29,907	35,814
% Average	97.1%	99.8%	100.1%	102.3%	114.0%	104.3%	83.5%	

Source: MDOT. Continuous Count Station at US 90 in Gulfport (west of Teagarden Road).

Table 3.10-5
Average Weekday Traffic by Hour of Day: June, 1999*:
US 90 West of Rodenburg Avenue (Biloxi)

AM				PM			
Hour	Volume	% of total	% of avg.	Hour	Volume	% of total	% of avg.
12 - 1	1,150	2.3%	55.0%	12 - 1	3,281	6.3%	151.8%
1 - 2	798	1.5%	36.9%	1 - 2	3,244	6.3%	150.0%
2 - 3	623	1.2%	28.8%	2 - 3	3,189	6.1%	147.5%
3 - 4	484	0.9%	22.4%	3 - 4	3,260	6.3%	150.8%
4 - 5	345	0.7%	16.0%	4 - 5	3,686	7.1%	170.5%
5 - 6	484	0.9%	22.4%	5 - 6	3,844	7.4%	177.8%
6 - 7	1,236	2.4%	57.2%	6 - 7	3,062	5.9%	141.6%
7 - 8	2,180	4.2%	100.8%	7 - 8	2,734	5.3%	126.5%
8 - 9	2,571	5.0%	118.9%	8 - 9	2,324	4.5%	107.5%
9 - 10	2,307	4.4%	106.7%	9 - 10	2,138	4.1%	98.9%
10 - 11	2,516	4.8%	116.4%	10 - 11	1,913	3.8%	88.5%
11 - 12	3,020	5.8%	139.7%	11 - 12	1,453	2.8%	67.2%

Source: Gulf Regional Planning Commission. Traffic Count, June 1-4, 1999.

*Raw counts, not adjusted for multi-axle vehicles.

Table 3.10-5 shows that the peak hour of the weekday traffic occurs between 5 PM and 6 PM, with a volume of 3,844 vehicles (approximately 7.4 percent of total weekday traffic). The second highest volume is 3,686 vehicles, which occurs between 4 PM and 5 PM and is approximately 7.1 percent of total weekday traffic. The five busiest hours of the day account for approximately 33.4 percent of the total weekday traffic.

3.10.1.4 Commuting Travel Patterns

According to the 1990 Journey to Work data collected by the U.S. Census Bureau for the Gulfport-Biloxi-Pascagoula Metropolitan Statistical Area, Jackson and Hancock Counties are the highest employment volume counties of origin for workers commuting into Harrison County and the city of Biloxi, as shown in Table 3.10-6 (U. S. Census Bureau, 1990).

Table 3.10-6
Workers Employed in Harrison County but Residing Out-of-County

Location	Number of Workers
Jackson County	8,092
Hancock County	2,439
Stone County	739
Pearl River County	383
George County	135

Source: U.S. Census Bureau, 1990.

1 According to a 1993 study conducted in Biloxi, US 90 exhibits a relatively balanced east-west
2 flow at all hours of the day (GRPC, 1993). However, traffic flowing in and out of the US 90
3 strip is distributed as shown in Table 3.10-7. Table 3.10-7 indicates that the predominate flow of
4 traffic is to and from the western (Gulfport) boundary, with I-110 accounting for 19.4 percent of
5 trips to and from US 90 in Biloxi.

6
7 **Table 3.10-7**
8 **Directional Distribution of Traffic**
9 **Entering and Exiting the Biloxi Strip**
10

Route	Percent of Traffic
I-110	19.4%
US 90 East	33.3%
US 90 West	47.3%

11 Source: Gulf Regional Planning Commission, June, 1993. Mississippi Gulf Coast
12 Transportation Management Plan for Waterfront Development.
13

14 These proportionate distribution patterns and actual counts help to explain the congestion on US
15 90. Of the three approaches to the Biloxi strip, I-110 has the most capacity, yet it carries fewer
16 trips than either approach on US 90.

17
18 However, significant growth in population and employment has occurred since the 1993 study,
19 which included data from four casinos existing at that time (Casino Magic, President, Biloxi
20 Belle and Isle of Capri). In 1999, there were ten casinos in operation within the city of Biloxi.
21 Consequently, current travel patterns may differ considerably from 1993. For example, I-110
22 carries approximately 47,000 daily vehicles, I-10 carries 21 percent more vehicles today than in
23 1995, and daily traffic volume on the Biloxi-Ocean Springs bridge has increased from 18,760 in
24 1990 to 32,000 today. Meanwhile, daily traffic volumes on US 90 at the Gulfport city limits
25 have increased from 20,820 to 36,000 vehicles during the same period (GRPC, 1999).
26

27 *3.10.1.5 High Accident Areas*

28
29 According to city of Biloxi officials, the worst accident locations on the Biloxi peninsula are as
30 follows:
31

- 32 • US 90 at Porter Avenue;
 - 33 • US 90 at White Avenue;
 - 34 • US 90 at Rodenberg Avenue;
 - 35 • US 90 at Veterans Avenue;
 - 36 • US 90 at Camellia Street (Biloxi's worst accident location—74 accidents in 1998);
 - 37 • US 90 at Beauvoir Road; and
 - 38 • US 90 at the signalized entrances to Broadwater Casino.
- 39

1 The highest accident location in Harrison County is the intersection of US 49 and Creosote Road
2 in Gulfport, where more than 100 accidents occurred in 1998. Other high-accident locations in
3 Gulfport include US 49 at Polk Street and I-10 at Lorraine Road (Kaplan, 1999a).

4 5 3.10.1.6 Roadway Improvement Plans

6
7 Overall, the ROI has serious highway congestion and access problems for vehicular travel.
8 Significant factors are both lack of capacity for east-west traffic and lack of capacity for north-
9 south traffic. A major concern for both north-south and east-west travel is the lack of alternate
10 routes.

11
12 The north-south routes are limited by the geography of the peninsula and the high cost and
13 environmental impacts of constructing bridges over the Back Bay. In addition, many of the
14 north-south surface routes are not continuous, requiring motorists to weave in and out of the east-
15 west system, particularly at Pass Road. The advent of I-110 has significantly relieved the north-
16 south capacity deficit, but I-110 does little to relieve the growing traffic on the west side of
17 Biloxi. Consequently, a location study and EIS are underway for a new East Harrison
18 Connector—a proposed grade-separated multi-lane facility connecting US 90 with I-10. The
19 MDOT has funded the initial phase of planning work for the East Harrison Connector, including
20 the location and environmental study, preliminary design and engineering, and limited funds for
21 hardship acquisition to preserve the right-of-way.

22
23 The lack of sufficient capacity on US 90 is a limiting factor within the ROI. Even after the East
24 Harrison Connector is constructed, most motorists wishing to use the new freeway, as with I-110,
25 must rely on US 90 for local access. US 90 is currently the only east-west principal arterial
26 spanning the length of the coastal urbanized area. I-10 cannot serve the needs of many motorists
27 because it is too distant from the dense coastal development in the US 90 corridor. According to
28 the Gulf Regional Planning Commission, traffic volumes at some locations on US 90 exceed the
29 volumes on I-10.

30
31 The Year 2010 and 2020 Cost Feasible Plan for Biloxi proposed widening US 90 to six and eight
32 lanes from I-110 east to the Biloxi Bay bridge (GRPC, 1996a). However, widening will not be
33 feasible due to concerns in the area, such as the large live oak trees within and along the right-of-
34 way and the historic homes still remaining along US 90. Consequently, the city intends to
35 increase east-west capacity by constructing a new east-west connector in the general corridor of
36 the CSX railroad tracks parallel to US 90.

37
38 Road improvements in Biloxi are funded by federal, state, and local sources. State highway
39 funds are provided pursuant to Section 65-1-141 of the *Mississippi Code 1972 Annotated* and are
40 programmed, along with federal highway funds, in the State Transportation Improvements
41 Program and three-year Maintenance and Construction Program. In addition, the Mississippi
42 Legislature created the gaming counties state-assisted improvement fund during the 1994
43 Regular Session. The Casino Gaming Act generates approximately \$36 million annually in
44 highway funds that are divided among several counties. In its 1996 Regular Session, the
45 legislature enacted House Bill 1269, which directed the MDOT to conduct a statewide analysis to

1 set priorities for highway improvements in counties such as Harrison that provide for gaming.
2 This analysis is contained in the *Mississippi Gaming Roads Capacity Analysis*, dated November
3 1996 (Baker, 1999a):
4

5 A list of committed roadway improvements in the ROI is in Appendix J. There are no
6 improvements planned for US 90. However, several related improvements are planned that will
7 relieve traffic congestion on US 90, including:
8

- 9 • **East Harrison County Connector:** A new, controlled-access, four-lane facility connecting
10 at the north end to I-10 and at the south end to US 90 in the ROI. The location of the new
11 facility is the subject of environmental study currently underway. Seven alternative routes
12 have been evaluated (MDOT, 1998).
13
- 14 • **Interstate 10:** MDOT plans to widen a 32-mile section of I-10 from four to six lanes
15 beginning at the Jourdan River in eastern Hancock County and ending at the Jackson County
16 line. Currently, widening is underway for a 12.5-mile section between Wolf River (west of
17 Beat Line Road; I-10 exit 28) and the Biloxi River (east of Lorraine Road; I-10 exit 38).
18
- 19 ▪ **New East-West Connector:** A new east-west four-lane arterial roadway has been proposed
20 for construction. This roadway would provide significant relief for US 90 and, if approved
21 by Harrison County voters, would parallel the CSX railroad tracks for six miles from
22 Veterans Avenue in Biloxi to Texas Avenue in Gulfport. Plans are to eventually extend this
23 roadway to Pass Christian (Kaplan, 1999b).
24
- 25 • **Bayview Avenue Extension:** The existing four-lane street between Caillavet Street and
26 Croesus Street is to be re-aligned and upgraded into a continuous four-lane section from
27 Croesus to Oak Street.
28

29 **3.10.2 Railroads**

30

31 The only railroad in the ROI is the CSX line, which passes east-west through the center of the
32 Gulfport-Biloxi peninsula. The railroad has one main track line and primarily serves freight
33 movements. An average of eight trains per day travel along these tracks and the majority of them
34 carry hazardous materials. CSX representatives state that CSX transports a variety of hazardous
35 materials on nearly every train through Biloxi (personal communication, W. Gleason, CSX
36 Manager of Hazardous Waste, New Orleans, LA, and A. Batstone, EDAW, November 17, 1999).
37 See also Emergency Management, Chapter 3.0.
38

39 Amtrak provides rail passenger service to the area via stations in Biloxi, Gulfport, and
40 Pascagoula. One "Sunset Limited" passenger train per day provides eastbound and westbound
41 service on alternating days (Amtrak, 1999).
42

43 The CSX railroad constitutes a major barrier to north-south traffic in the Gulfport-Biloxi
44 peninsula. Table 3.10-8 lists 29 at-grade railroad crossings along the CSX railroad in the city of
45 Biloxi (GRPC, 1996b).

1
2 Only I-110 provides a railroad crossing grade separation. At-grade crossings elsewhere result in
3 frequent delays for motorists and can impede emergency vehicles. Such delays are particularly
4 problematic for north-south roadways (e.g., Beauvoir Road and Veterans Avenue) that serve
5 coastal casinos.
6

7 Nine railroad crossings have been proposed for closing by CSX and MDOT: Debuys Street,
8 Popps Ferry Road extension, Veterans Avenue, Iberville Drive, White Avenue/Larcher
9 Boulevard, Hopkins Street, Caillavet Street, Lee Street, and Oak Street. Closing these facilities
10 would result in lower traffic volumes and less relief for US 90 and Pass Road (GRPC, 1996a).
11 The *Biloxi Comprehensive Plan* proposes construction of ten underpasses to separate railroad
12 traffic from vehicular traffic as a measure to reduce traffic volume and improve traffic safety
13 (City of Biloxi, 1996a).
14

Table 3.10-8
Railroad Crossing Inventory: City of Biloxi

Street Name	Crossing	Signal Type	Speed (mph)	Tracks	Trains/day
Oak St.	At grade	Lights/bells	45	1 main	6 thru; 8 night
Crawford St.	At grade	Lights/bells	45	1 main	6 thru; 8 night
Dorries St.	At grade	Signs	45	1 main	6 thru; 8 night
Holley St.	At grade	Signs	45	1 main	6 thru; 8 night
Keller St.	At grade	Lights/bells	45	1 main	6 thru; 8 night
Lee St.	At grade	Lights/bells/gates	45	1 main	6 thru; 8 night
Nixon St.	At grade	Signs	45	1 main	6 thru; 8 night
Main St.	At grade	Lights/bells	45	1 main	6 thru; 8 night
Lameuse St.	At grade	Lights/bells	45	1 main; 1 bus.	6 thru; 8 night
Delauney St.	At grade	Signs	45	1 main; 4 bus.	6 thru; 4 switch; 8 night
Magnolia St.	At grade	Signs	45	1 main; 3 bus.	6 thru; 4 switch; 8 night
Reynoir St.	At grade	Lights/bells	45	1 main; 2 bus.	6 thru; 2 switch; 8 night
Caillavet St.	At grade	Lights/bells/gates	45	1 main; 3 bus.	6 thru; 8 switch; 8 night
Bohn St.	At grade	Signs	45	1 main; 1 bus.	6 thru; 8 switch; 8 night
Hopkins Blvd	At grade	Signs	45	1 main	6 thru; 6 switch; 8 night
Seal Ave.	At grade	Signs	45	1 main	6 thru; 2 switch; 8 night
Iroquois St.	At grade	Signs	45	1 main	6 thru; 8 night
Benachi Ave.	At grade	Signs	45	1 main	6 thru; 8 night
Querens St.	At grade	Signs	45	1 main	6 thru; 8 night
Porter Ave.	At grade	Lights/bells	45	1 main	6 thru; 8 night
Gill Ave.	At grade	Lights/bells	45	1 main	6 thru; 8 night
White Ave.	At grade	Lights/bells/gates	60	1 main	6 thru; 8 night
Iberville Dr.	At grade	Lights/bells	60	1 main	6 thru; 8 night
Rodenberg Ave.	At grade	Lights/bells	60	1 main	6 thru; 8 night
McDonnell Ave.	At grade	Lights/bells	60	1 main	6 thru; 8 night
Veterans Ave.	At grade	Lights	60	1 main	6 thru; 8 night
Iris St.	At grade	Lights/bells/gates	60	1 main; 1 pass	6 thru; 8 night
Beauvoir Rd.	At grade	Lights/bells/gates	60	1 main; 1 pass	6 thru; 8 night
Eisenhower Dr.	At grade	Lights/bells	60	1 main	6 thru; 8 night

Source: *Multimodal Transportation Corridor and Multimodal Transportation Center, Volume II, Harrison County, Mississippi*; Gulf Regional Planning Council, 1996.

3.10.3 Public Transportation

Public transportation in the study area is provided by the Coast Transit Authority (CTA). CTA provides local fixed route service, including a "Beachcomber Trolley" route along US 90. CTA also provides convention shuttles, trolley service, and specialized contract services, such as employee shuttles and special services for seniors and persons with disabilities. The standard passenger fare is \$1.00, with reduced rates of 50 cents for senior citizens and 75 cents for students. The system has a total of 45 transit vehicles, with capacities ranging from 12 to 45 passengers (CTA, 1998, 1999a, and 1999b).

CTA routes serving Biloxi casinos include Route 7 "Ocean Springs" (US 90 from Porter Avenue to the Ocean Springs Bridge), Route 31 "East Biloxi" (Backbay casinos along Bayview Avenue and Palace Casino), and the Beachcomber Trolley serving Biloxi casinos along US 90 from the Gulfport city limits to the Ocean Springs Bridge (1999a).

Table 3.10-9 provides a summary of passenger ridership by route and type of service in 1998. Table 3.10-10 shows fixed route ridership by month for the years 1993 to 1998.

Table 3.10-9
Ridership by Route and Type of Service: 1998

Route/Type of Service	No. of Riders	% Total - All Services
Rt. 24 Keesler	105,636	16.0%
Rt. 26 N.C.B.C.	12,971	2.0%
Rt. 31 Backbay Biloxi	36,304	5.5%
Rt. 33 Pass Road Biloxi*	3,691	3.6%
Rt. 34 Pass Road*	71,515	10.8%
Rt. 35 Pass Road Gulfport	30,876	4.7%
Rt. 37 North Gulfport	23,755	3.6%
Rt. 38 Orange Grove*	5,565	0.8%
Rt. 7 Biloxi/Ocean Springs	17,849	2.7%
Rt. 1 Beachcomber	206,750	31.3%
Total Scheduled Service	534,912	81.0%
Total Contract/Special	125,231	19.0%
Total CTA Service	660,143	100.0%

Source: Coast Transit Authority.

*Route operational less than 12 months.

Table 3.10-10
Fixed Route Ridership by Month: 1993 to 1998

Month	1993	1994	1995	1996	1997	1998	% Change 1993-98
January	29,007	40,863	42,647	44,891	41,402	41,051	41.5%
February	31,594	46,517	44,906	46,923	42,753	44,008	39.3%
March	33,497	53,074	51,649	52,164	48,064	45,688	36.4%
April	35,200	51,155	52,238	49,302	46,628	47,318	34.4%
May	43,674	46,529	52,180	51,907	47,850	48,343	10.7%
June	43,013	45,850	51,957	51,342	42,709	44,374	3.2%
July	46,725	46,581	49,233	53,368	43,483	44,199	-5.4%
August	46,005	49,983	51,009	54,210	50,180	46,408	0.9%
September	48,222	46,525	54,481	46,799	44,878	37,326	-22.6%
October	53,189	46,683	49,238	48,573	46,067	49,938	-6.1%
November	48,997	46,847	49,701	50,867	45,656	44,751	-8.7%
December	42,483	45,587	45,329	40,296	38,341	41,508	-2.3%
Total	459,621	566,194	594,568	590,642	538,011	534,912	16.4%

Source: Coast Transit Authority.

Table 3.10-10 shows a 16.4 percent increase in CTA fixed route ridership over the period 1993 to 1998. Local officials envision a growing role for public transportation in the US 90 corridor, with casino-related travel representing a significant market. In 1998, the CTA Beachcomber route served 206,750 passengers, and CTA officials believe there is a potential for substantial increases with improved service (MDOT, 1999b). In addition to CTA service, each of the casinos offers shuttle buses for travel among casinos and hotels in the corridor.

A number of improvements have been proposed that could relieve traffic and improve service to the casinos, including:

- Constructing satellite parking lots north of the US 90 corridor to intercept casino-bound vehicle traffic, and provide a transit shuttle system connecting the lots with the casinos.
- Providing pedestrian paths such as an east-west boardwalk on the south side of US 90, along with pedestrian bridges over US 90 (GRPC, 1996b).

3.10.4 Pedestrian/Bicycle Circulation

A 26-mile pedestrian pathway consisting of boardwalks and sidewalks is under development. The pathway is funded in part with federal transportation funds and will extend along the entire Harrison County beachfront. Approximately ten miles of these pedestrian facilities are currently in place (GRPC, 1996a).

Safety for pedestrians crossing US 90 to reach hotels, casinos, and the beach is a major concern in the US 90 area, where in many cases the casinos are located over water south of US 90 and the

hotels are on the opposite (north) side of the highway. Pedestrian safety in urban areas is a function of many factors, including the width of streets to be crossed, sight distance for motorists and pedestrians, and the speed of oncoming traffic.

Pedestrian safety improvements may consist of sidewalks, crosswalks, traffic signals for pedestrians at signalized crossings, warning lights for motorists placed at crosswalks, refuge areas in medians of wide highways, and grade-separated pedestrian ways (e.g., bridges or tunnels). Pedestrian crosswalks and pedestrian signal phases are provided at some locations along US 90. In addition, an overhead pedestrian bridge is located at Grand Casino near the intersection of Pine Street and US 90.

The *Biloxi Comprehensive Plan* envisions a bikeway system plan for both recreation and transportation purposes. A recent community survey ranked bikeway system development third in desirability among all recreational facility alternatives mentioned (City of Biloxi, 1996a).

3.10.5 Parking Management

On-street parking is allowed on many major streets in downtown Biloxi. In addition, the City of Biloxi Code requires off-street parking as shown in Table 3.10-11.

Table 3.10-11
Parking Requirements by Land Use: City of Biloxi

Land Use	Minimum Number of Off-Street Parking Spaces Required
Hotel	100+ rooms: 1 space per dwelling unit or suite for the first 100 rooms and 0.85 spaces for each unit in excess of 100 units
Casino	1 space per 50 sq. ft. of gaming area plus 1 space for each 2 employees at maximum employment on a single shift
Restaurant	1 space per 150 sq.ft. of gross floor area
Auditorium, arena	1 space per 75 sq.ft. of floor space in seating areas
Amusement place	1 space per 100 sq.ft. of floor area; parking requirements not applicable when these are accessory uses
Marina	1 space per boat slip; 2 spaces for the harbormaster

Source: City of Biloxi Code; 1998b.

An important issue is the accessibility of parking to casinos and related facilities. As shown in Figure 3.10-3, literature research indicates that fifty percent of walkers are accustomed to walking a distance of less than 700 feet from a parking facility to their destination (Harris and Dines, 1988; Smith and Butcher, 1994). Other sources cite a comfortable walking distance for local trips to be about a five-minute walk (Duany and Plater-Zyberk, 1992).

3.10.6 Air Transportation

3.10.6.1 Gulfport-Biloxi Regional Airport

Air travel to and from Biloxi is through the Gulfport-Biloxi Regional Airport, which is located one mile south of I-10 and approximately five miles northwest of the ROI. The principal routes of access to the airport consist of I-10 and US 90 via US 49.

Scheduled service from this facility is provided by six airlines (AirTran, ASA/Delta, Northwest Airlin, Southeast Airlines, Continental Express, and Reno Air) along with specialized casino-based charters, local charters, helicopter service, and general aviation. The Mississippi Air National Guard operates a defense preparedness training center at this location (City of Biloxi, 1998b).

Gulfport-Biloxi Regional Airport is served by two active runways. The primary runway is a 9,000-foot-long, all-weather jet runway. The secondary (general aviation) runway is currently 5,000 feet long but will be extended to 8,100 feet in the future (City of Biloxi, 1998b).

The air traffic control and landing system includes an FAA tower, approach/departure control, and dual instrument landing systems (City of Biloxi, 1998b).

The airport has aggressive future plans including the expansion of the current facility, increases in the number of carriers flying into Gulfport-Biloxi, and the expansion of service to international flights. Since 1993, \$22 million has been invested to add two new concourses, four gates, customer service areas, and public parking. An additional \$1.3 million in construction is currently underway. The airport has over 1,400 acres of property, much of which is available for planned expansion such as additional terminal build-out, runway expansion, and rental car facilities (Smith and Frost, 1999).

Scheduled passenger departures and arrivals are increasing significantly (see Table 3.10-12). Scheduled passenger traffic in August of 1997 was up 82.4 percent over August of 1998 (34,812 passengers versus 18,640 passengers). However, charter traffic was down 78 percent for the same period. (GRPC, 1998c).

Table 3.10-12
Passenger Departures/Arrivals

Passengers	August 1996	August 1997	Change
Scheduled Departures	9,173	16,736	82.4%
Scheduled Arrivals	9,467	18,076	90.0%
Total Scheduled Passengers	18,640	34,812	86.8%
Charter Departures	7,776	2,176	-72.0%
Charter Arrivals	8,141	1,324	-83.7%
Total Charter Passengers	15,917	3,500	-78.0%
Total All Passengers	34,557	38,312	10.9%

Source: Gulf Regional Planning Commission, 1997.

In March, 1999, AirTran Airways began new daily non-stop jet service between the Gulfport/Biloxi Regional Airport and a number of cities, including Dallas/Fort Worth, Houston, Fort Lauderdale, Tampa, Orlando, and Atlanta. The additional seven flights were the result of a joint marketing partnership between AirTran and Beau Rivage Resort. The flights have increased inbound seat availability to approximately 2,100 per day, a 60 percent increase in daily seat availability (Smith and Frost, 1999).

Air cargo operations at the airport consist of the following:

- Full service cargo operation with loading equipment and personnel;
- A 15,000-square-foot sorting facility;
- A 2,000-square-foot refrigerated holding room for perishable goods; and
- An area for multiple future warehouse expansions (Gulfport-Biloxi Regional Airport, 1999).

3.10.6.2 Keesler Air Force Base

Keesler Air Force Base (AFB) operates a military airport in the ROI. Resident operations include the 403rd Airlift Wing parent organization of the 815th Airlift Squadron and the 53rd Weather Reconnaissance Squadron (City of Biloxi, 1996a). Currently, the base accommodates twenty C-130, six C-12, and four C-21A aircraft with an average daily operations of 56 flights. An operation is defined as one departure, one approach, or half a closed pattern (consists of both a departure portion and an approach portion). The number of flights also include approximately six flights per day from C-9 aircraft that are not assigned to the base but are related to the Keesler AFB hospital (GRPC, 1998b).

Destination Broadwater EIS

Major Roadways in the Primary ROI

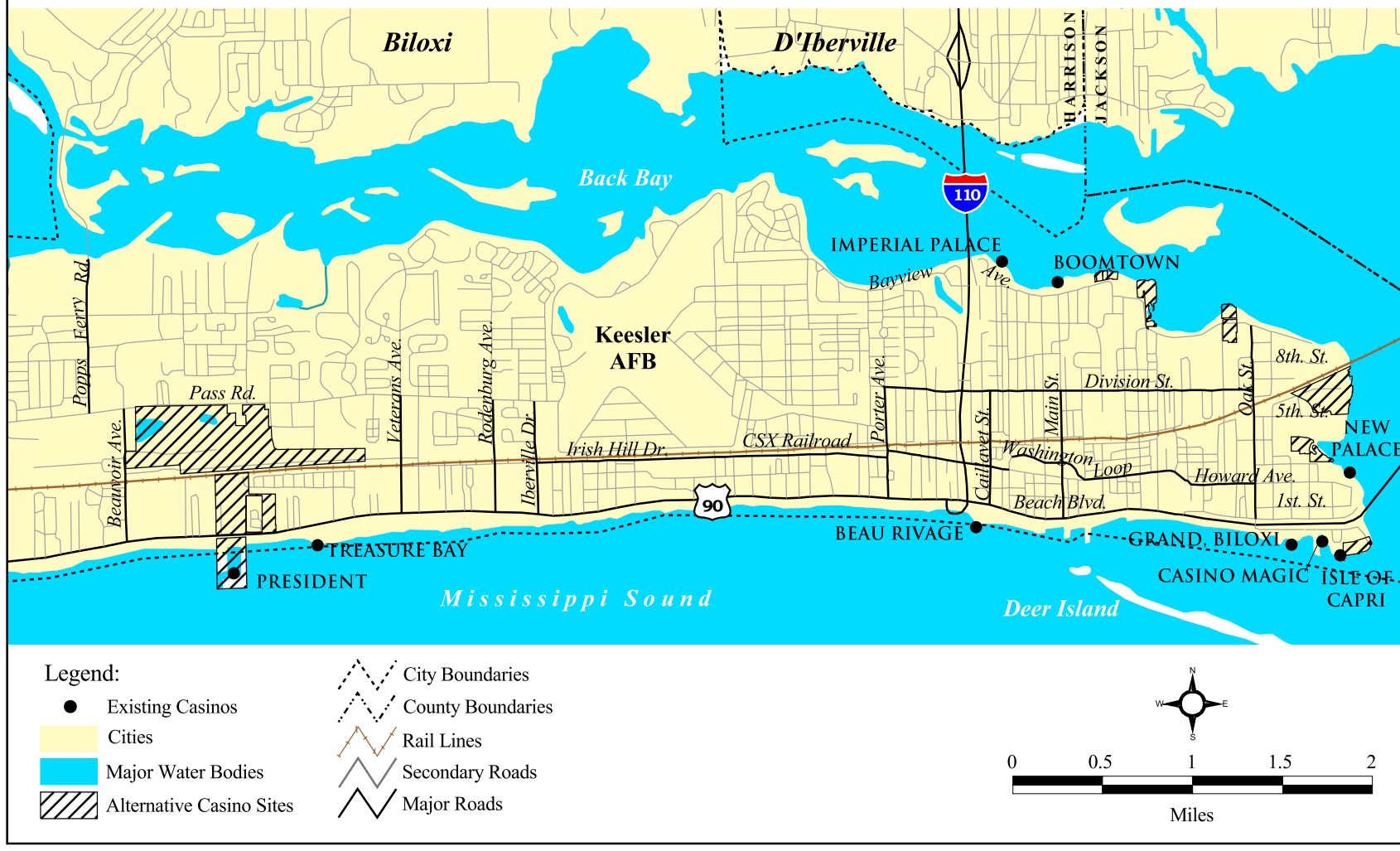


Figure 3.10-1: Major roadways in the primary ROI

Destination Broadwater EIS Major Roadways in the Secondary ROI

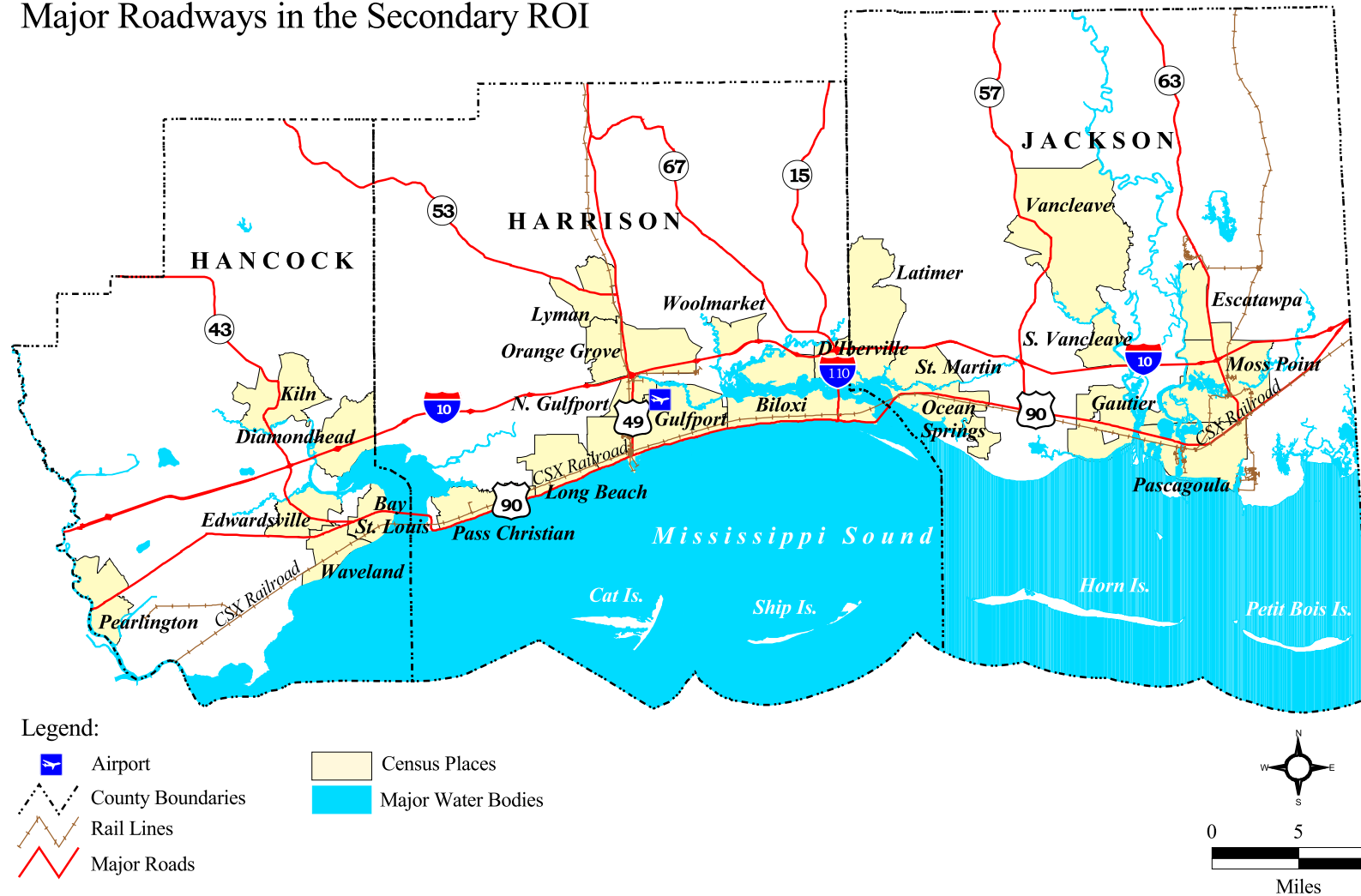


Figure 3.10-2: Major roadways in the secondary ROI

Destination Broadwater EIS

Walking Distance Standard

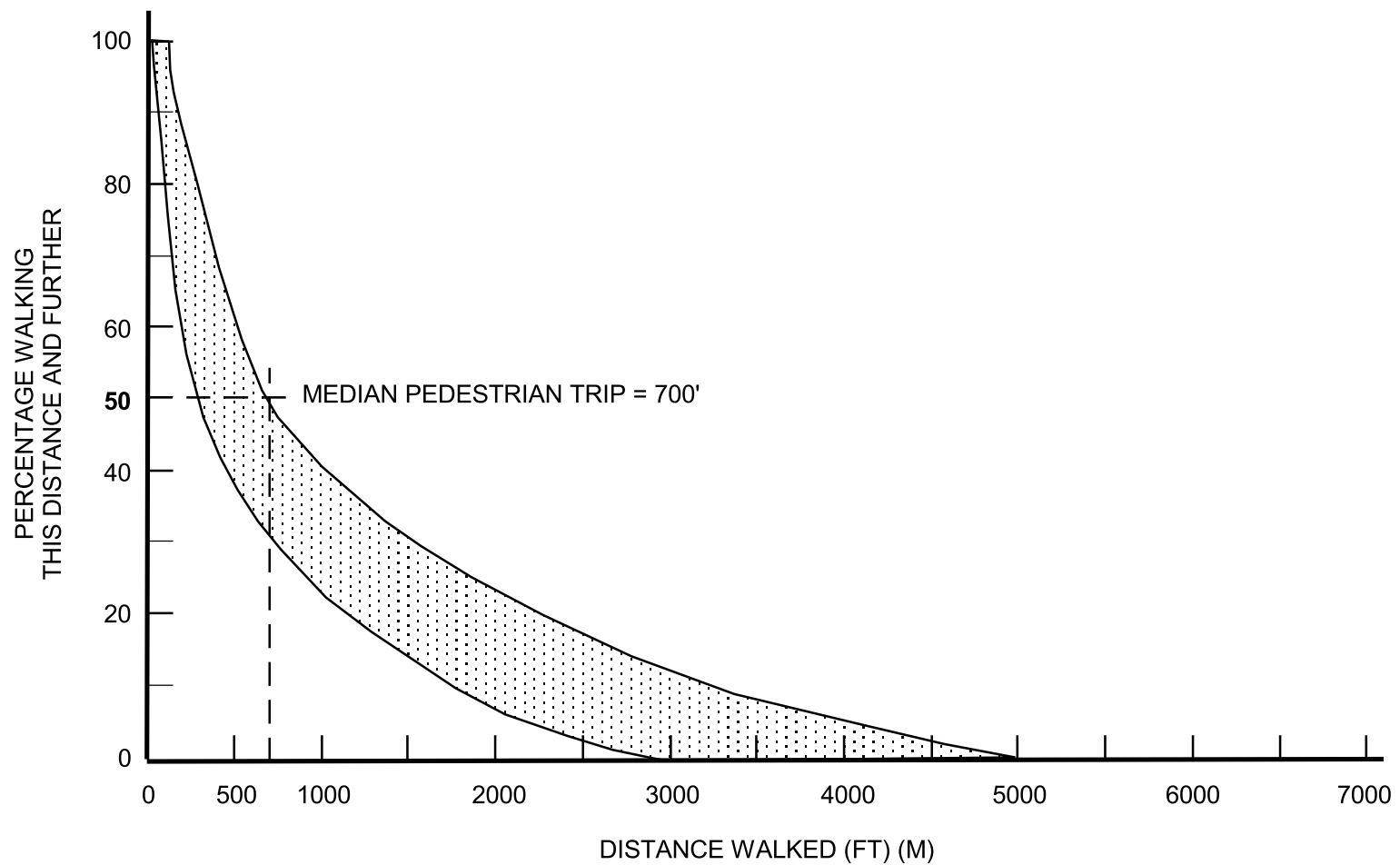


Figure 3.10-3: Walking distance standard (Source: Harris and Dines, 1988)